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# The Walk-in Counselling Model of Service Delivery: Who Benefits Most?

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**Abstract**

The walk-in counselling (WIC) model of service delivery has been found to reduce psychological distress more quickly than a traditional model of service delivery involving a wait list. A question remains, however, as to the relative benefit of the WIC model for different client groups. The present study uses graphical inspection and multilevel modeling to conduct moderator analyses comparing two agencies, one with a WIC clinic and the other with a traditional wait list approach, and their relative impact on psychological distress. Key findings regarding the differential benefits for different types of presenting problems as well as clients at different stages of change are discussed.

La recherche montre qu'un service de consultation sans rendez-vous réduit la détresse psychologique plus rapidement qu'un modèle traditionnel fonctionnant avec liste d'attente. Les bénéfices relatifs du modèle de consultation sans rendez-vous pour différentes clientèles demeurent cependant méconnus. Cette étude utilise l'inspection de graphiques et la modélisation multiniveau afin de mener une analyse de modération qui compare deux cliniques: sans rendez-vous ou suivant le modèle traditionnel avec liste d'attente. L'étude examine les impacts relatifs de ces modèles sur la détresse psychologique. Les principaux résultats portent sur les bénéfices différentiels selon les problématiques de santé mentale présentées et selon les stades de changement des usagers.

**Keywords:** Service delivery models; walk-in counselling; single-session therapy; moderator; mental health service; hierarchical linear modeling

**Mots-clés:** Modèles de prestation de services; consultation sans rendez-vous; thérapie à séance unique; modérateur; services de santé mentale; modèle linéaire hiérarchique

### **The Walk-in Counselling Service Delivery Model: Who Benefits Most?**

Walk-in counselling (WIC) is a specific service delivery model that offers a single counselling session to individuals or families who come to the mental health service provider without an appointment and are seen by a counsellor within an hour in most cases. Most WIC services employ single session therapy (SST), defined as “any one-visit treatment that is intended to be potentially complete unto itself” (Hoyt, 1994, p. 141). Both WIC and SST have been identified as promising approaches to dealing with increasing demand for mental health services and long waiting lists for clients who need such services (Hoyt & Talmon, 2014; Hymmen, Stalker, & Cait, 2013).

The existing research, although limited, has consistently pointed to positive benefits of the WIC model, such as reductions in psychological distress or problem severity and satisfaction with the service (Harper-Jaques, McElheran, Slive, & Leahey, 2008; Harper-Jaques & Foucoul, 2014; Hymmen et al., 2013). In a recent mixed-method longitudinal comparison group study, Stalker et al. (2015) demonstrated that, on average, clients who accessed the WIC model showed faster improvement in psychological distress than those who accessed the traditional service delivery model that usually involves a wait list. This observed benefit of the WIC model may not benefit all types of clients equally, however. The objective of this paper is to explore whether there are certain client groups who benefit more than others from the WIC model.

Research on the question of who benefits from WIC is rare and existing studies have produced mixed findings. Our review of this research focuses on studies involving presenting problems that are commonly brought to community-based mental health and counselling agencies; it excludes studies that focused on the effectiveness of a very specific intervention with a narrowly defined presenting problem such as specific phobias (Ollendick et al., 2009); chronic obstructive pulmonary disease (Kunik et al., 2001) or panic disorder (Nuthall & Townend, 2007), because these problems are most often treated in specialized settings. We have reviewed research on both planned SST and SST delivered in a walk-in setting. This literature suggests that the most salient dimensions associated with outcome might be severity of presenting problem and readiness to change (Stalker, Horton & Cait; 2012).

#### **Severity of Presenting Problem**

On the one hand, Perkins (2006) noted that SST has been helpful with a wide range of clinically significant mental health problems affecting children and adolescents. Even adults presenting with self-harm for the first time at a hospital who received a single session were significantly less likely to repeat self-harm than a comparison group (Lamprecht, et al., 2007). Gawrysiak, Nicholas, and Hopko (2009) reported that university students with a Beck Depression Inventory score of 14 or greater showed significantly greater reductions in depression compared to a no-treatment control two weeks after a single session of treatment for depression. However, they excluded students with active suicidal intent, current psychosis or bi-polar disorder. Employing a measure of client satisfaction rather than symptom reduction, Miller (2008) reported satisfaction with SST was highest for clients presenting with sexual abuse/assault, self-esteem, and child behaviour issues, and lowest for clients presenting with “anxiety/stress” and “depression/withdrawn”. However, only ten percent of the clients presenting with depression and 9.1% of those presenting with anxiety/stress were dissatisfied.

On the other hand, Hampson, et al. (1999) reported that less severe pre-test scores on the Child Behaviour Checklist were associated with better outcomes at follow-up, and another study reported a

family's sense of pride and its ability to solve problems was associated with better outcomes (Campbell, 1999). Furthermore, several studies of SST and WIC have excluded clients presenting with what might be considered more severe presenting problems, suggesting the researchers believed that these problems were inappropriate for SST. Problems excluded include: risk of harm to self or others (Littrell et al., 1995; Perkins, 2006); history of sexual abuse, acquired brain injury, serious mental illness and living with HIV/AIDS (Boyhan, 1996); psychosis, immediate suicidal risk and bipolar disorder (Campbell, 1999; Gawrysiak et al., 2009); and families with domestic violence and child abuse or neglect issues (Campbell, 1999; Hampson et al., 1999; Perkins, 2006; Price, 1994). Supporting our contention that these presenting problems have been excluded because the researchers believed they were too severe for SST, one report indicated that after two evaluations of a program involving single-session family consultations, staff decided their single-session family clinic would focus on "parents and children under 12 years of age who present with conduct disorders (including suspected ADHD) and where the family seems otherwise stable" (Hampson et al., 1999, p. 199). "[F]amilies with histories of trauma, domestic violence and child abuse and/or neglect and those with multiple problems and stresses" (p. 199) would be excluded from the single-session clinic.

A study in an adult walk-in service (Harper-Jaques & Foucault, 2014) found the degree to which clients believed they had ideas and solutions for solving a problem immediately after the walk-in session predicted outcome one month later. None of the variables assessed prior to the walk-in session predicted problem severity one-month later. Hoyt and Talmon (2014), following their review of the literature, also concluded that severity of complaint and level of distress as well as client demographics do not predict outcome ratings of improvement.

### **Readiness to Change**

An evaluation for a walk-in family therapy service explored the relationship between initial client motivation and subsequent improvement three to five months later (Miller & Slive, 2004). Therapists rated client motivation according to Berg's (1989) categories of readiness for change: "customers," "surveyors," and "visitors." "Customers" are seen as the clients most likely to engage in the change process. The evaluators reported that 86% of clients of the walk-in clinic were assessed as "customers." Pointing out that this is a much larger proportion than the one-third of clients assessed as motivated to change reported in studies of ongoing counselling (Asay & Lambert, 1999, as cited in Miller & Slive, 2004), these authors argued that WIC clinics lead to improvement in presenting problems because they respond to clients when they are most motivated to make changes. However, Iveson, George and Ratner (2014), who also assessed clients of a walk-in service according to Berg's categories of readiness to change, found no difference related to the assessed level of motivation. Furthermore, Hoyt and Talmon (2014) concluded that the role of client motivation and stage of readiness is not clear.

The Transtheoretical Model of Change (TTM) (Prochaska & DiClemente, 1982, 1983), conceptualizes behavior change as a process that proceeds over time and involves five stages of readiness to change<sup>1</sup>. The stages are termed Precontemplation, Contemplation, Preparation, Action, and Maintenance. A meta-analysis of studies assessing the ability of readiness to change to predict psychotherapy outcomes found a clinically significant effect size ( $d=.46$ ) (Norcross, Krebs, & Prochaska, 2011). Stalker, Horton and Cait (2012) reported clients of a walk-in clinic

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<sup>1</sup> The theory originally postulated four stages of change, but the stage of Preparation was added later.

who scored highly on the Contemplation and Maintenance stages of change were more likely to report improvement in psychological distress one month later. Although the TTM would postulate that high scores on the Action stage of change as well as Preparation, Contemplation and Maintenance stages would predict more improvement than the Precontemplation stage, clients attending a WIC may be more likely to perceive themselves as “thinking about making a change” rather than committed to change, as the Action stage requires.

Based on this limited prior research we posed the following hypotheses:

1. Clients of the walk-in model of service delivery who present with more severe presenting problems (e.g. major mental illness, psychological trauma, child welfare issues, or harm to self) will show less improvement at follow-up compared to clients with other presenting problems.
2. Clients of the walk-in model of service delivery who score highly on contemplation and maintenance stages of change will show greater improvement in psychological distress than those scoring lower on these stages of change. (The measure of readiness to change used in the current study did not include the Preparation stage).

Demographic variables such as gender, age, and newcomer status are other factors important to explore as potential moderators regarding clinical effectiveness of mental health services (Miranda, Nakamura, & Bernal, 2003; Westbrook & Kirk, 2005). However, no studies have reported differences related to these factors with respect to outcomes following WIC or SST (Hoyt & Talmon, 2014). Anecdotal reports from many WIC services have indicated that proportionately more males attend walk-in counselling services than attend scheduled counselling. Two agencies contributing data to an inventory of WIC clinics in Ontario specifically reported that proportionately more men were attending their walk-in clinics than traditional services (Bhanot-Malhotra, Livingstone, & Stalker, 2010). A study comparing outcomes for children and their caregivers attending a WIC service with those attending scheduled counselling reported that more male caregivers attended the walk-in service (12.8%) than the usual service (5.4%) (Barwick, et al., 2013). Given that currently no information is available regarding the potential moderating effects of gender, age, and newcomer status for outcomes associated with the WIC model, we included these factors as part of an explorative analysis without stating specific hypotheses.

The current study is a follow-up analysis of the main study reported in Stalker et al. (2015). Clients of two Family Service agencies that serve similar client populations, have staff with similar backgrounds and experience, and use comparable treatment approaches in two separate cities participated in this longitudinal comparison group study; one agency employs a WIC service delivery model offering a single session one day per week, and the comparison agency employs the traditional service delivery model requiring that clients telephone to request service, and after talking with an intake worker, are usually placed on a wait list. Stalker et al. (2015) demonstrated that, on average, clients who accessed the WIC model showed faster improvement in psychological distress than those who accessed the traditional model of service delivery. The purpose of this current moderator analysis was to investigate whether the observed benefits of the WIC model differ across specific client groups.

## **Method**

### **Agency Settings**

Both the WIC and comparison agencies are Family Counselling agencies located in Ontario, Canada. The agencies' catchment areas are 97 kilometers apart and have similar population characteristics. At both agencies, 95% of clients receive a subsidy and no one is denied service for



financial reasons. Counsellors at both agencies are predominately female (90%) and are trained at the Masters level in social work, counselling psychology, or marriage and family therapy.

The WIC clinic at Agency A is open one day a week and any individual, couple, or family can visit the clinic without an appointment. At the time of the study, twenty-nine to seventy-five people attended the WIC clinic each day, with 40-50 being the most common daily range. Upon arrival, clients register with the receptionist and meet with an intake worker who briefly screens for risk to self or others, addictions, and signs of intimate partner violence. A therapist then meets with the client(s), normally for up to 90 minutes, using a strengths-based approach that involves collaboration with the client(s) to develop a written plan. Clients are encouraged to “work the plan” for a period and, if they choose, to return to the WIC clinic or request ongoing counselling. This written plan is the agency’s record of the WIC intervention.

Agency B at the time of the study did not have a WIC clinic, nor was there one available in its city during that time. Funding for client subsidies was limited at this agency and most of the eight to fifteen people who called each day to request counselling were eligible. This resulted in the agency being able to provide only three to five telephone intake appointments per day, in order of receipt. Those who called early enough to be included in this quota met with an intake worker by phone, normally within a few days. After determining the needed services, the intake worker typically placed the caller on a wait list, also suggesting relevant community services that might be accessed in the meantime. Those who called after the daily quota has been reached were asked to call back the next business day. The wait list, which averaged four to eight weeks long, would have been much longer if there were no daily quota.

Counsellors at Agency A have a minimum of five years counselling experience and are assisted at the WIC clinic by MSW/Counselling practicum students whom they train in SST and supervise. Since introducing the WIC clinic, Agency A has provided in-service training in Narrative SST and Solution-Focused approaches. The counsellors also receive ongoing training in modalities such as Cognitive Behavioural (CBT), Emotionally Focused, Eye Movement Desensitization and Reprocessing (EMDR), and Psychodynamic therapies. Similarly, counsellors at Agency B have 10 years of clinical practice experience, on average, and have received in-service training in CBT, Narrative, Emotionally Focused, and EMDR therapies. This agency also trains and supervises MSW/ Masters level counselling students. In working with each client, counsellors at both agencies use their professional judgment to determine the most appropriate approach.

## **Recruitment**

At the WIC clinic, receptionists invited every prospective client aged 16 years and older to participate in the study. Those who agreed were asked to complete the baseline questionnaire while they waited for an available counsellor. Research assistants (RAs) were present in the waiting room and assisted if a client requested help filling out the questionnaire.

At the comparison agency, receptionists responded to counselling request calls as usual, but, before terminating the call, invited all callers 16 years and older to participate in the study. When telephoning to follow-up as usual, intake workers also explained the study and again invited callers to participate. Individuals who consented to participate were either transferred to speak to the on-site RA immediately or were asked for contact information to allow the RA to follow up later that day. The RA recorded participants’ answers to the baseline questionnaire.

The participants from both agencies were interviewed by telephone to complete subsequent questionnaires four and ten weeks later. Participants were mailed a \$10 coffee shop gift card after

completing the four-week follow-up, and a second gift card after the 10-week follow-up. Following the 10-week follow-up, participants were asked for their consent to be considered for inclusion in the study's second (qualitative) phase, which involved telephone interviews with 48 participants drawn from both agencies (Cait et al., 2016).

### Measures

**GHQ-12.** The GHQ-12 (Goldberg, 1972), a 12-item self-report scale developed to identify psychological distress, was administered at all three time points. We used the Likert-type scale scores (0-3) because they have better distributional properties for longitudinal studies of change compared to the more common GHQ scoring, developed for screening purposes (McDowell, 2006). The total scores range from 0-36, with a high score indicating a high level of distress.

**Presenting problems.** At baseline, participants selected from a list of possible problems those that concerned them the most. The list included depression, anxiety, parenting issues, grief/loss, problems in couple relationship, stress, coping with life changes, coping with abuse, and "other" where participants were asked to specify the problem. They could endorse more than one problem.

For the analysis, specific problems were grouped together under more general categories; for example, depression and anxiety were grouped under *Mood Issues* (see Table 1). Problems listed under "Other", which included such terms as "family problem", "anger issues", "child welfare issue", "mental illness (e.g. Bi-polar Disorder or Schizophrenia)", "financial problems", "school problems", "trauma", and "harm to self", were also grouped into general categories. Based on previous studies that excluded severe presenting issues, we chose to group "coping with abuse", mental illness, child welfare issues, trauma/PTSD, and harm to self under the category "*Complex Needs*".

**Stages of Change Questionnaire (SOCQ-18).** The SOCQ-18 (Bellis, 1994), a shortened version of the Stages of Change Questionnaire (SOCQ), developed by McConaughy, DiClemente, Prochaska, and Velicer (1989) was administered at baseline only. Four subscales correspond to the original four stages of change: Precontemplation, Contemplation, Action, and Maintenance. Adequate internal consistency with adults (coefficient alphas: .75 to .87; Bellis, 1994) has been demonstrated and the shortened version was used effectively with depressed adolescents (Lewis, et al., 2009)

**Use of other health and social services.** A questionnaire to assess participants' prior use of health and social services was developed by the researchers and administered at all three time points; questions about use of health services were similar to those used by the World Bank in the health module of Living Standards Measurement Surveys (Grosh & Glewwe, 1998). Questions about use of mental health and social services included a list of relevant local agencies; participants indicated those with which they had contact and the number of visits or contacts in the previous month. This format follows recommendations of researchers who have studied reliable ways to collect this type of data (Reid, Toba, & Shanley, 2008). All methods and procedures were reviewed and approved by the Research Ethic Board of Laurier University.

### Data Analysis

To investigate whether the difference in the pattern of change between the WIC group and the comparison group is more or less pronounced in some participant groups, we used a combination of graphical exploration and statistical tests using a multi-level regression model (Raudenbush & Bryk, 2002). For the graphical analysis, we plotted time (in weeks) against GHQ-12 scores (i.e., psychological distress) using the least-square means (see Figure 1). Least-square means were used to allow for the consideration of covariates that were also included in the multi-level model. For binary moderator

variables, four lines were plotted representing all four possible combinations with agency (i.e., WIC or comparison). Continuous variables were first converted into categorical variables representing low, medium, and high levels based on the distribution of the variable in the sample at baseline and then crossed with agency.

We used hypothesis testing for three-way interaction effects within hierarchical, longitudinal, slopes-as outcome models to confirm whether potential moderating effects were statistically significant. In this multilevel growth curve model, repeated measures were nested within participants and the effect of the WIC approach to service delivery was estimated as a second level dummy variable (Raudenbush & Bryk, 2002; Singer & Willet, 2003). We used SAS, Proc Mixed V9.2, to estimate the models by using full maximum likelihood for model development and restricted maximum likelihood estimation for the final model reported in this paper (Singer & Willet, 2003).

We began with the final model from the main analysis presented in Stalker et al. (2015), except that non-significant variables were excluded to simplify the model. Each participant's individual trajectory was modeled as a quadratic growth model including both a linear component representing the initial slope at baseline and a quadratic component representing the curvature or acceleration in each trajectory (Raudenbush & Bryk, 2002). *Age* (centered on its mean of 35), *Gender*, the cross-level interaction of Time and the use of instrumental services prior to baseline were used in the main analysis model as control variables. *Group* was entered as a second level dummy variable to account for the effect of the walk-in approach relative to a traditional approach. The cross-level interaction effects *Group\*Time* and *Group\*Timesqr* represent the effect of the WIC approach for the respective indicator cases (e.g., the category 'others' for Gender; 0 for non-centered continuous variables; the sample average for grand-mean centered variables). The Stages of Change scores and the GHQ-12 scores were grand-mean centered so that the index case (i.e., cases with a score of 0) for each of those variables represents the average case.

Because of the complexity of the model and power issues when analyzing interaction effects, we conducted a separate MLM analysis for each moderator variable (presenting problems, stages of change and demographics). For each variable, we entered the two three-way interaction effects of interest (e.g., *Group\*Time\*Mood* and *Group\*TimeSqr\*Mood*) in addition to the two-way interaction of *Group* and the moderator variable (e.g., *Group\*Mood*) and base effect of the variable (e.g., *Mood*). If the difference in the pattern of change between the WIC and the comparison group is more or less pronounced in one group versus another (e.g., mood issues vs. others) the coefficient for either or both of the three-way interactions should be significant.

Several participants (4.5%) had missing values for one or more of the sub-scale scores on the SOCQ-18 (stages of change). Markov chain Monte Carlo multiple imputation using the SAS procedures PROC MI and PROC MIANAZYE was used to estimate the coefficients and standard errors involving those variables (Yuan, no date).

## Results

### Participants

Out of an estimated 729 individuals who requested services at the WIC clinic (Agency A) during the research period, 359 (49%) completed the baseline questionnaire; 307 of the 359 (85.5%) consented to follow-up. Of these, 221 (72% of those consenting to follow-up) completed data collection at the 4-week follow-up, and 229 (75%) completed the data collection at the 10-week follow-up. At the comparison agency, out of an estimated 532 eligible individuals who requested counselling, 151 individuals (28%) completed the baseline data collection and these agreed to follow-up. At 4-weeks

follow-up, 146 of the 151 (97%) completed the data collection and at 10 weeks, 142 (94%) completed the data collection.

Stalker et al. (2015) provide detailed sample characteristics for each agency. Key variables pertinent to the present study include gender (40.5% male at the WIC and 26.1% at the comparison site), age (mean of 32.81 years (SD=13.35) at the WIC and 38.35 years (SD=13.71) at the comparison site), and country of birth (26.8% born outside of Canada at the WIC and 22.7% at the comparison site). The mean GHQ-12 score for the WIC participants at baseline was slightly higher than for the comparison group. Reported use of mental health and instrumental support services in the four weeks prior to baseline was similar, although the comparison agency participants reported slightly more prior contacts with other mental health organizations.

### **Moderator Analysis**

**Presenting problems.** Table 1 shows the prevalence of the presenting problems categories based on the participants' self-report at baseline. Addiction and anger issues, having a very small prevalence rate in both study sites, were not considered in this analysis. Overall, participants in the WIC site reported a higher number of presenting problems than those in the comparison group. Prevalence of mood and stress-related problems were higher in the WIC group (71% vs 58% and 68% vs. 54%, respectively). Participants were free to endorse more than one presenting problem.

For the Mood category, the graph indicated a more pronounced early improvement in mental distress for those who reported anxiety or depression in the WIC site compared to those reporting the same problems in the comparison site. At ten-week follow-up, both groups had similar GHQ-12 scores on average, however. Although those without these presenting problems also improved faster in the WIC site versus the comparison site, the difference is not quite as pronounced. As can be seen in Table 2 (Model 1) the MLM analyses suggest a moderation effect for the Mood category regarding the linear and curve-linear effect of time. The negative coefficient of -1.59 for the interaction of the mood category with the linear group effect over time suggests that the greater reduction in GHQ-12 scores for the WIC participants compared to the comparison participants is even more pronounced for those who presented with depression and/or anxiety problems compared to those who did not. However, this difference becomes exponentially smaller over time due to the significant positive coefficient (0.11) for the quadratic (i.e., curve-linear) effect of time. Based on this model, a client who did not present with a mood issue could expect no or very little additional improvement from going to a WIC clinic as compared to service with a traditional wait list approach, whereas someone with a mood issue could expect to improve by an additional 4.6 points on the GHQ-12 scale after four weeks if they go to WIC rather than a traditional service. This equates to a Cohen's *d* of 0.62, which is considered a medium effect size (Cohen, 1992).

*Table 1: Prevalence of Presenting Problem Categories and Baseline GHQ-12 Scores*

<b>Grouping Category</b>	<b>Family</b>	<b>Mood</b>	<b>Addiction</b>	<b>Stress</b>	<b>Anger</b>	<b>Complex Needs</b>
<i>Included Problems &amp; Concerns</i>	Parenting issues, problems in couple relationship, family problem	Depression, Anxiety	Addiction	Stress, coping with life changes, grief/loss, interpersonal conflict (not family), work problems, self-development/self-esteem, financial problems, school problems	Anger/anger management	Coping with abuse, child welfare concern, trauma/PTSD, diagnosis of mental illness, harm to self
<i>Prevalence in WIC site</i>	169 (50%)	241 (71%)	10 (3%)	229 (68%)	7 (2%)	69 (20%)
<i>Prevalence in comparison site</i>	75 (45%)	95 (58%)	0	89 (54%)	5 (3%)	24 (15%)
<i>Baseline GHQ-12 score in WIC site</i>	22.13	24.22		23.29		24.60
<i>Baseline GHQ-12 score in comparison site</i>	19.61	22.44		21.64		20.26

Figure 1 shows that for the Complex Needs group in the comparison site, relatively little improvement over the first four weeks was followed by no further improvement on average between four and ten weeks. In contrast, people presenting with complex needs at the WIC site significantly improved in the first four weeks followed by no additional improvement between 4 and 10 weeks.

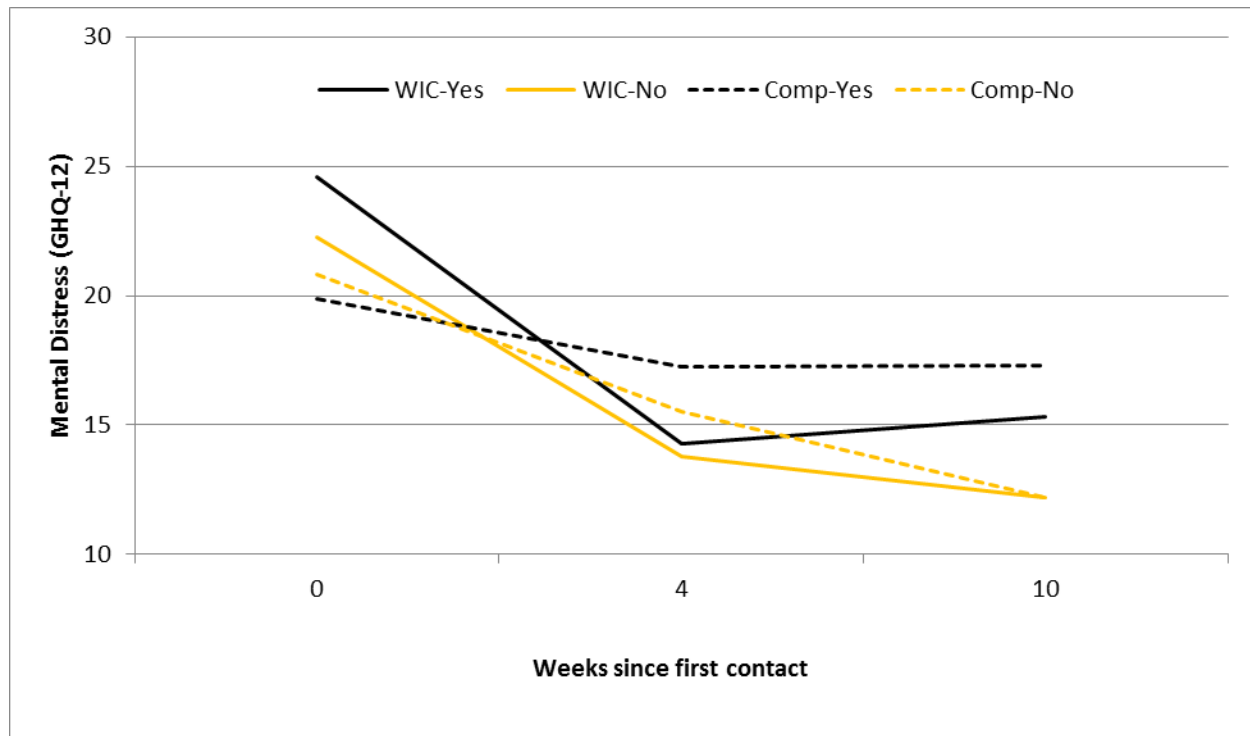
Table 2: MLM Model of GHQ-12 Scores (grand-mean centered): Presenting Problems

Parameter	Model 1		Model 2	
	Estimated Coefficient	SE	Estimated Coefficient	SE
<b>SE Fixed Effects</b>				
Intercept	-3.82***	0.83	-2.82***	0.73
Time (growth rate)	-1.55***	0.22	-1.54***	0.22
Time <sup>2</sup> (acceleration)	0.07***	0.02	0.07***	0.02
0.02Age (35)	0.04*	0.02	0.04*	0.02
Gender (Female)	2.11***	0.54	2.02***	0.56
Prior Inst. s. service use*Time	0.03*	0.01	0.03*	0.01
Group	-1.37	1.04	1.77*	0.76
Group*Time	-0.30	0.40	-1.29***	0.30
Group*Time <sup>2</sup>	0.04	0.24	0.11***	0.03
Mood	1.92*	0.88		
Group*Mood	4.35***	0.88		
<b>Group*Time*Mood</b>	<b>-1.59***</b>	<b>0.40</b>		
<b>Group*Time<sup>2</sup>*Mood</b>	<b>0.11**</b>	<b>0.04</b>		
Compl.Needs			1.17	1.24
Group*Compl.Needs			0.85	1.59
<b>Group*Time*Compl.Needs</b>			<b>-0.80</b>	<b>0.48</b>
<b>Group*Time<sup>2</sup>*Compl.Needs</b>			<b>0.09°</b>	<b>0.05</b>
<b>Fit Statistics</b>				
-2ResLog Likelihood	7958.3		8004.8	
AIC	7992.8		8038.8	

Note: SE = Standard Error;  
° p =.05; \* p<.05; \*\* p<.01; \*\*\* p<.0

The difference between the two sites for those presenting with problems other than complex needs is less pronounced. This suggests most of the benefit of going to a WIC site for people with complex needs is gained immediately following the initial contact with the agency. The result of the MLM analysis in Model 2 indicated no significant interaction effect of complex needs regarding linear change but a marginally significant ( $p=0.05$ ) interaction effect of 0.09 for the acceleration, that is, the curve-linear effect of group on the change over time in GHQ-12 scores.

*Figure 1. Group differences in changes in mental distress over time: Complex Needs (Yes/No)*



Note: WIC-Yes: Walk-in participants who endorsed Complex Needs; WIC-No: Walk-in participants who did not endorse Complex Needs; Comp-Yes: Comparison site participants who endorsed Complex Needs; Comp-No: Comparison site participants who did not endorse Complex Needs

To test whether this marginally significant effect might be related to mood issues that people with complex needs might also experience, we compared two models for which we first entered the effects for mood issues followed by the addition of the complex needs. The coefficients for both categories of presenting problems are very similar in the two models and the same interaction effects are significant. The Loglikelihood ratio test indicates a better fit of the model with the interaction term for complex needs included, providing further evidence that this effect is present in the data. This significant interaction for the curve-linear effect confirms that the most pronounced difference between the two groups for those with complex needs is during the first few weeks.

The graphical inspection and multi-level model analysis indicated no meaningful interaction effects regarding the Family or the Stress categories.

**Stages of change.** For each of the four possible stages of change, we investigated whether a higher score at each stage is related to a more pronounced effect of WIC on GHQ-12 scores over time. The analyses indicated no significant interaction effect for the pre-contemplation or the action stage.

*Table 3: Mean Stages of Change Scores in the Two Sites*

Stage of Change	Pre-Contemplation	Contemplation	Action	Maintenance
<i>Sample Items</i>	I am not the one with a problem. It doesn't make sense for me to be here. I guess I have faults, but there is nothing I need to change.	It might be worthwhile to work on my concerns. I have problems and I really think I should work on them.	I am doing something about the concerns that have been bothering me. I am actively working on my problems/concerns.	I need a boost right now to maintain the changes that I have already made. I am working to prevent myself from having a relapse.
<i>Mean (SD) in WIC site</i>	1.84 (0.62)	4.24 (0.55)	3.74 (0.61)	3.65 (0.71)
<i>Mean (SD) in comparison site</i>	1.75 (0.56)	4.35 (0.55)	3.97 (0.54)	3.90 (0.66)

Regarding the contemplation stage, Figure 2 indicates that the difference between the WIC and comparison sites is most pronounced for those with relatively high scores on the contemplation scale as compared to those with moderate or low scores. In fact, it appears that those high in contemplation experience quite a drastic improvement over the first four weeks in the WIC site, while comparable clients in the traditional site see only very moderate improvement. The initial statistical tests for the regression coefficients in the MLM model, however, did not result in any significant interaction effects for contemplation scores. This disagreement between the graphical and statistical analyses could be because the moderation effect is not continuous. That is, there is no meaningful difference when comparing those scoring in the middle to those scoring on the lower end of the scale. The effect could be detectable only when comparing those scoring high on the scale to those scoring medium or low, which would be consistent with the graphical inspection.

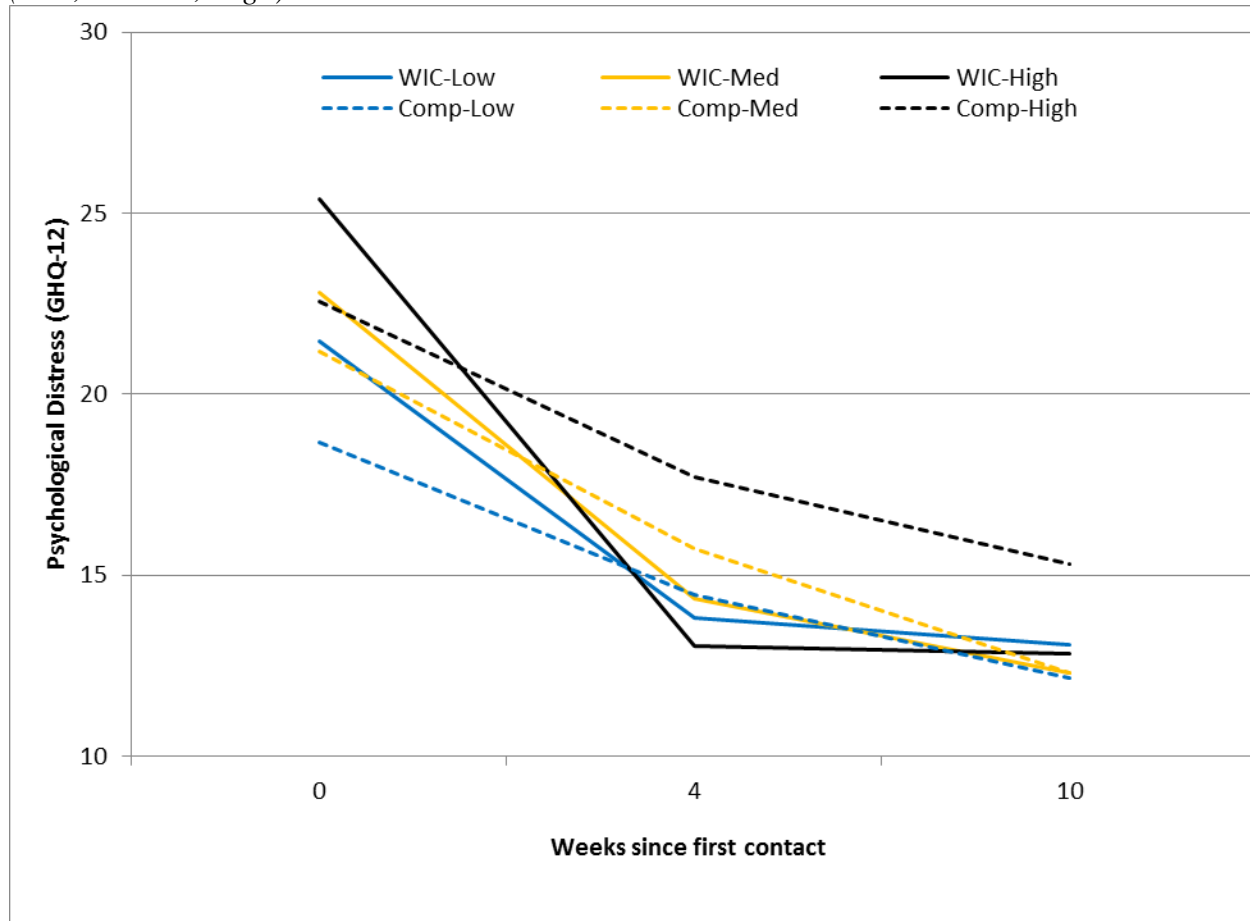
To test this possibility, the contemplation scale was transformed into a binary variable with high contemplation relative to medium and low contemplation. The results of this analysis are presented in Table 4 (Model 4), suggesting a statistically significant interaction effect of -1.23 for the moderation of the linear relationship of group and time and a marginally significant ( $p=0.0478$ ) moderation effect of 0.09 for curve-linear relationship of group and time (i.e.,  $\text{time}^2$ ). Based on these estimates, a client with a low or medium contemplation score at baseline could expect to have improved 4.6 points more on the GHQ-12 scale after four weeks in the WIC site relative to the comparison site. In comparison, the difference between the two sites would be expected to increase by an additional 4.56 points (or 0.61 standard deviation units) for those high in contemplation. This finding suggests that, although all contemplation groups seem to benefit from the WIC model, those high in contemplation tend to benefit significantly more.

A similar moderation effect was found for the maintenance scale. Those high on the maintenance



scale improved significantly faster in the WIC site relative to the comparison site. For those with lower scores on the scale, the difference between the two sites is less pronounced.

*Figure 2. Group differences in changes in mental distress over time: Contemplation Stage of Change (Low, Medium, High)*



Note: WIC-Low: Walk-in counselling participants scoring in the low range on Contemplation; WIC-Med: Walk-in counselling participants scoring in the medium range on Contemplation; WIC-High: Walk-in Counselling participants scoring in the high range on Contemplation. Comp-Low: Comparison group participants scoring in the low range on Contemplation; Comp-Med: Comparison group participants scoring in the medium range on Contemplation; Comp-High: Comparison group participants scoring in the high range on Contemplation.

**Demographic characteristics.** The moderating effects of three key demographic characteristics were explored: gender, age, and country of birth. None of the tests were significant.

Table 4

*MLM Model of GHQ-12 Scores (grand-mean centered): Stages of Change*

Parameter	Model 4		Model 5	
	Estimated Coefficient	SE	Estimated Coefficient	SE
<b>Fixed Effects</b>				
Intercept	-3.12***	0.73	-2.84***	0.69
Time (growth rate)	-1.55***	0.23	-1.55***	0.22
Time <sup>2</sup> (acceleration)	0.07***	0.02	0.07***	0.02
Age (35)	0.04°	0.02	0.04°	0.02
Gender (Female)	2.02***	0.06	1.84***	0.55
Prior Inst. s. service use*Time			0.03*	0.01
Group	2.09**	0.76	2.59	0.70
Group*Time	-1.26***	0.30	-1.50***	0.29
Group*Time <sup>2</sup>	0.11***	0.03	0.13***	0.03
HighContemplation	2.70*	1.16		
Group*HighContemplation	0.10	1.63		
<b>Group*Time* HighContem.</b>	<b>-1.23*</b>	<b>0.53</b>		
<b>Group*Time<sup>2</sup>* HighContem.</b>	<b>0.09°</b>	<b>0.05</b>		
Maintenance			2.08**	0.66
Group* Maintenance			1.11	0.87
<b>Group*Time* Maintenance</b>			<b>-0.77**</b>	<b>0.28</b>
<b>Group*Time<sup>2</sup>* Mainten.</b>			<b>0.06*</b>	<b>0.03</b>
<b>Fit Statistics</b>				
-2ResLog Likelihood	8115.7		8094.0	
AIC	8123.7		8102.0	

Note: Coefficients are unstandardized; SE = Standard Error (corrected for multiple imputation);

° p=0.0478; \* p<.05; \*\* p<.01; \*\*\* p<.001

### Potential Explanation for Moderation Effects

What might explain these differences at follow-up across the different levels of mood issues, complex needs and stages of change? One possibility is that, at least for some clients of the WIC clinic, the single session increases hope and offers new ways of perceiving the presenting concern, which results almost immediately in decreased symptoms of distress (Cait et al., 2016). Single session approaches promote an emphasis on clients' strengths and steps they have already taken to resolve the presenting problems. The qualitative data suggest that the WIC model tends to support clients' sense of self efficacy. One woman who was dealing with a history of depression, anxiety, substance abuse and PTSD, when asked about what was helpful about the WIC session said, "Just talking to somebody for even that little bit of time. . . having her write down things and tell me things. She was very positive with me and that I know a lot, because I do know a lot." (Cait et al., 2016, p. 13).

Another possibility is that the WIC model serves as a gate to other community services that comparable clients of the traditional model might not be aware of or feel confident enough to access prior to their initial counselling session. We explored this by examining self-reported contact with other

community agencies following baseline at both sites. Those with complex needs in the comparison site reported a decrease in contact with mental health agencies in the first four weeks following baseline, while those clients with the same type of presenting problems in the WIC site reported a significant increase in use of other services over the same period. Those clients who did not endorse complex needs reported only a small increase in use of other services at both sites.

It is also important to note that a proportion of participants who attended the WIC reported contact with the same agency for ongoing counselling in the weeks following the walk-in visit. At the 4-week follow-up 16.9% of the participants presenting with complex needs and 25.9% of the total sample reported at least one contact with ongoing services. At the comparison site, 33.3% of complex needs participants and 31% of the total sample reported at least one contact with ongoing services at that agency. In addition to the WIC session, it is likely that many factors contribute to the faster improvement of clients attending the WIC model, -- factors having to do with the specific individual, his/her presenting problems and readiness to change, as well as the other services and supports clients are able to access in the weeks following the walk-in visit.

### **Discussion**

Our hypothesis that clients of the WIC service delivery model presenting with more severe presenting problems would show less improvement at follow-up compared to clients with other presenting problems was not confirmed. In fact, our analysis suggests those with complex needs seem to profit more from the WIC model, especially during the four weeks following the initial session. Those clients presenting with mood issues also reported more initial improvement when they visited a WIC agency compared to the traditional model. Our hypothesis that clients of the walk-in model scoring highly on the contemplation and maintenance stages of change would show greater improvement than those scoring lower on these stages was confirmed. Again, this effect is most pronounced during the earlier weeks following the initial contact.

This study makes an important contribution to the research on the WIC service delivery model in that it has employed a comparison condition, has used a standardized measure of psychological distress, and employed a more robust measure of readiness to change than previous studies. The inclusion of use of other mental health and social services in the community is also valuable as the role that WIC services play within the network of community services has not been previously examined.

The finding that participants reporting mood issues who attended the WIC clinic improved more quickly is an important finding for the mental health field because depression and anxiety tend to be the most common reasons people seek mental health services. That people presenting with complex needs tend to improve more quickly following a visit to a WIC service supports previous arguments that SST is clinically effective, regardless of the severity of the problem (Hoyt & Talmon, 2014). That people presenting with complex needs were more likely to access other community services following the walk-in session suggests that for some, it may not be the single session with its focus on strengths and practical steps alone that is helpful, but also the provision of information and encouragement to seek assistance from other community resources.

Given that random assignment is not a feasible option, a strength of this study is that the comparison site is situated in a similar type of city (with the same geographical, political, and funding context), includes a counselling agency that serves similar populations, has staff with similar experience, and uses comparable counselling approaches. One potential limitation of this comparison is the different participation rates at baseline (49% for the WIC vs. 28% for the comparison site). Note, however, that the attrition rate after the baseline assessment at the WIC was higher than at the comparison site, so that

at the 4-week point only 30.3% (221 of 729) of estimated eligible WIC clients provided data – a proportion similar to the proportion of eligible clients who provided data at all assessment points at the comparison site. The most likely reason for the difference in participation rates is the forced dissimilarity in the recruitment process as discussed in Stalker et al (2015). The invitation to participate in the study in the WIC was done in person while in the comparison site it was done over the phone by the receptionist or intake worker. The difference in participation rates suggests that in-person recruitment tends to yield more participation, while requests by telephone yield less participation.

This difference in participation rates raises the question to what degree the study samples are comparable to the typical population for each agency. A comparison of the sample demographics with information about the typical population demographics for these same agencies suggest that both samples are representative with the exception that there were fewer male-identified individuals in the study sample of the comparison site compared to the general population of that clinic (26% in this study versus 42% in comparison agency documents). For a comparison study of relative effectiveness, however, more important than the representativeness, is the general comparability of the two samples in regard to key variables. Not surprisingly for a non-randomized study, some differences between the two samples do exist such as gender and baseline GHQ-12 scores. These differences may be related to the type of clients who access the WIC model. We compensated for these unavoidable differences as much as possible using sophisticated statistical models including the use of covariates as control variables. MLM is especially well-suited to account for these issues because instead of group averages over time, individual growth curves are compared. It cannot be completely ruled out, however, that some of the moderator effects are partially due to the different level of severity at baseline.

The larger number of presenting problems in the WIC group may be related to another limitation. Clients in the WIC site completed their baseline assessment through a self-report questionnaire while they waited for their session. Comparison clients provided baseline data via telephone interview when they consented to participate during their initial telephone contact with the agency. Follow-up data for both sites were collected via telephone interviews. The more anonymous mode of data collection at baseline in the WIC site may be associated with reporting more presenting problems. The advantage of multilevel model growth curve modelling, however, is that it compares individual growth trajectories with each other and investigates the influence of other variables on those trajectories over time.

The difference in initial recruitment and baseline data collection described above is also the most likely cause for the differences in the attrition rate between the two study sites (74% in the WIC site vs. 94%). A potential issue for the analysis here is non-random differential attrition. That is, those individuals with certain characteristics that may be related to treatment effectiveness (e.g., initial motivation for treatment) are more likely to drop out in either the WIC or comparison site. An attrition analysis indicated, indeed, that in the comparison site those who scored high on the pre-contemplation sub-scale were more likely to drop out of the study relative to the average drop-out rate for that site (11.1% difference) while this difference was significantly less pronounced in the WIC site (2.5% difference). It seems reasonable that, generally, those participants who feel more uncertainty about the need for mental health treatment are also less motivated to participate in follow-up data collections. The fact that this differential attrition effect was less present in the WIC site means that at the final data collection relatively more participants who were less ready for treatment at baseline were present in the WIC group than in the comparison group. Assuming that treatment readiness positively impacts treatment effectiveness, this could mean that the positive effect for WIC on reduction in psychological distress may have been slightly underestimated. The difference in this drop-out rate could also be an indicator that the immediate availability of a counselling session could have a positive impact on

treatment motivation. Unfortunately, the SOCQ-18 was only administered at baseline preventing an exploration of that possibility in this study. Future research should explore the effect of WIC on changes in treatment motivation. It is uncertain to what degree this differential attrition rate may have affected the non-significant finding for the moderator effect of pre-contemplation, especially given that baseline scores for pre-contemplation were controlled for in the model.

### Conclusions

In general, this study supports previous calls for the field to move from the traditional service-delivery model that requires people to wait for mental health services to one in which people can access WIC at the time they most feel the need. Access to these types of services seems to be specifically beneficial for those clients who have made the decision to seek help either for new sources of distress or reoccurring issues that could lead to decline in psychological wellbeing if not attended to in a timely matter.

Future research should attempt to employ randomized assignment to WIC and a control condition. We recognize this will be challenging because most people will tend to choose assistance that is immediately accessible rather than one that requires a wait time. A similar study to the one conducted here that includes several WIC clinics and several comparison services would be desirable. Studies with larger samples are also needed so that the many paths that clients pursue after visiting a WIC clinic or requesting service from the traditional model can be better identified and their contribution to outcomes clarified. Larger samples would also allow more robust comparison of clients presenting with different issues and needs. Studies that include assessment of the effect of different therapists and different therapy approaches within the WIC model of service delivery would also be useful. Finally, the moderation effect of the complex needs category should be further investigated to confirm the benefits suggested by our findings.

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